REMARKS

After the foregoing Amendment, claims 10-26, as amended, are pending in this application. Claims 10-14, 16-17, 20, 22 and 24 have been amended to more particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Claims 1-10 stand canceled. Applicant submits that no new matter has been added to the application by the Amendment.

Applicant respectfully requests that the Amendment After Final be entered in accordance with 37 CFR §116 and MPEP 714.13 since: (1) no new matter has been added to the application by the Amendment; (2) the Amendment resolves all issues raised by the Examiner in the Final Office Action; (3) the subject matter of the Amendment already has been included in the Examiner's search and therefore does not require the Examiner to perform further searching; (4) the Amendment places the application in condition for allowance or in better form for appeal and (5) the Amendment does not result in a net addition of claims to the application. Further, the Amendment could not have been presented earlier since it responds to new grounds of rejection made in the final rejection.

Telephone Interview

Applicant wishes to thank the Examiner for the courtesy of the telephone interview conducted on January 4, 2005 in which Applicant's attorney of record explained the previously provided Proposed Amendments to Claim 10, 13 and 22. Applicant agrees with the comments in the Interview Summary.

The Present Invention

The claimed invention is directed to a remote management system for configuring and monitoring devices, such as printers, which are connected to a distributed computer network. A user of the management system is able to communicate with a device to obtain information about the device even though the management system does not have specific knowledge about the protocols and/or languages used by the device.

Devices such as printers, are typically described by various configuration variables using a variety of system protocols and languages which are not easily understood by humans. Generally, for a user at the remote monitoring system to configure such devices or to receive status information from the devices, computer programs with hard coded mapping must be written which provide translation of the device information in the native language of the device into a human understandable language at the user interface, or the user must have detailed knowledge of the device language.

Advantageously, the present invention relieves the user of having detailed knowledge about the language of network devices and avoids the necessity of having to create specialized computer programs or scripts having hard coded mapping in order for the user to communicate with the network devices. The present invention achieves these advantages by utilizing generic applications that are modular and data driven in combination with a database, which may be either part of the system (a data dictionary) or may be external (a data central), to provide for translation of device information in the native language of the device into a human understandable language. The present invention also provides the means for dynamically and automatically updating itself with respect to the languages and protocols of a device of unknown type which is newly discovered by the network.

Rejection - 35 U.S.C. § 103

The Examiner rejected claims 10-12 under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 6,389,464 (Krishnamurthy) in view of U.S. Patent No. 6,785,464 (Smith et al.). The Examiner states that Krishnamurthy discloses all the steps for presenting values of variables from a selected type of device to a user interface except for disclosing that the form of the values is in a human understandable form. The Examiner further states that Smith et al. discloses a network monitoring system with a plurality of different protocols and Barrett illustrates that it is well known to translate information into a human readable form. The Examiner states it would have been obvious to one having ordinary skill in the art at the time of the invention to

incorporate the technique of a network using HTML and SNMP and to translate the information into human readable form. Applicant respectfully traverses the rejection.

Krishnamurthy et al. describes a site server 12 configurable from an NMC manager 18, 20, or from a remote computer 58 using a web browser. An SNMP agent 82 processes SNMP data packets received from the NMC managers 18, 20 (col. 6, line 55 to col. 7, line 13). A web server 64 located in the site server 12 allows communication between the remote computer 58 and the site server 12. Web pages 70 downloaded from the web server 64 allow the user to manage specific devices that are connected to the site server 12 (col. 10, lines 32-58). The web pages are useful to guide a user to enter configuration information to associate a particular device 14 to be managed by the site server 12 to an MIB table in an MIB 72 (col. 6, lines 36-44). Instrumentation drivers 88 convert SNMP operations into the sequences required to communicate with devices 14. The sequences executed by the instrumentation drivers are stored in a database 80 (col. 9, lines 57-61). Port drivers 90 provide the low level protocols for each for the devices connected to each port.

Claim 10 has been amended to recite: (1) that values of variables are presented to a user in a human-understandable language, (2) that the data dictionary contains information for translating the values of the variables in the native language of the device into the human-understandable language, and (3) that the data engine, in order to obtain the values of all the variables associated with a specific type of device, requests the names of all the variables from the data dictionary. Accordingly, amended claim 10 now recites:

> *10. A method using a computer system for automatically presenting values of variables from a selected type of device to a user interface in a human-understandable language, the system including a data engine, a data dictionary containing information for translating the values of the variables in the native language of the device into the human-understandable language, and a data agent which is connected to the device, the method comprising the steps of:*
>
> *requesting by the data engine from the data dictionary, names of all variables associated with the selected type of device;*

obtaining by the data agent from the selected type of device, values of the variables;

obtaining, by the data engine, from the data agent, the values obtained by the data agent;

obtaining by the data engine from the data dictionary the translating information;

translating, by the data engine, the obtained values of the variables into the human-understandable language using the translating information obtained from the data dictionary; and

presenting, by the data engine, to the user interface, the translated values in the human-understandable language.

Applicant first submits that Krishnamurthy does not teach or suggest a data dictionary containing information for translating the values of the variables in the native language of the device into the human-understandable language or a step of using the information obtained from the data dictionary to translate the values of device variable into human understandable form.

Krishnamurthy discloses two databases in the server 12, the MIB 72 and the relational database 80. While the MIB 72 does store the names of device variables in an SNMP table (col. 11, lines 49-53), the MIB does not contain information for translating the values of the device variables in the native language of the device into a human understandable language. Similarly, while the relational database 80 stores information for translating the native language of the device into SNMP, the relational database 80 does not provide any information useful for translating either SNMP or the native language of the device into a human understandable language.

Krishnamurthy teaches that the translation of the values of device variables is performed by scripts that execute in the web server 64 (see col. 8, lines 24 – 61) and not by processing information obtained from a data dictionary in a data engine. Thus, Krishnamurthy teaches an entirely different method for presenting information about devices to a user interface and lacks at least two features recited in amended claim 10: (1) the step of translating the values of the variables in the native language of the device directly into a human understandable language using information from a database and (2) a database having information for translating the values of the variables into the human understandable language.

Applicant further submits that Krishnamurthy does not teach or suggest a step of requesting from a data dictionary the names of all the variables associated with a selected type of device. Such a step is a necessary step in the present invention in order to automatically present to the user, the values of all the variables associated with device. In contrast, Krishnamurthy stores information about specific devices connected to the network in the MIB 72 and does not store information about device types, whether connected or not to the network, in a database.

Smith does not make up for the deficiencies of Krishnamurthy. Smith is directed to a computer system in which all the workstations and peripherals communicate using e-mail. Each workstation and device includes a processor that supports some of the functions of a mail server and one or more mail clients (col. 5, lines 12-16).

In the system disclosed by Smith commands and responses are encapsulated into the body of e-mail messages. Smith states at col. 4, lines 37-65 that benefits are obtained by using "plain text" messages. Smith further states at col. 5, lines 17-39 that "the body may include text (e.g. plain text or other human readable text)". However, what is proposed by Smith is not a system which translates "values of variables into human-readable language" as recited in amended claim 10. As made clear in Fig. 2 and the description at col. 9, line 37 to col. 11, line 32, the "plain text" encapsulated in the body of the mail message is merely the native language of the device, i.e. PCL, POSTSCRIPT etc. (see col. 9, lines 44-49). Further, by examining Fig. 2 and particular those functions associated with processing a command/response (message I/O 222, mail I/O 230 , list processor 232 and process monitor 238 described at col. 9 through col. 11, it is apparent that there is no function disclosed by Smith which translates from the native language of the device into a human understandable language.

Further, there is no teaching or suggestion of a database (data dictionary) in Smith which contains information for translating values of the device variables into a human-understandable language and which is accessed by a data engine to obtain the information for translating the variables into a human-understandable language.

The Examiner has taken Official Notice that it is well known to translate information to human-understandable form, citing Barrett et al. However, Applicant is unable to find in Barrett

et al., any teaching or suggestion for translating the values of a variable in the native language of a device into human-understandable language using information from a data dictionary, as recited in amended claim 10. Rather, Barrett merely teaches the use of an application programming interface 26 using EMAPI notation containing a definition of objects, attributes and operations that comprise protocols, for use between client applications and the server used to manage network elements (see col. 4, lines 11-23). Such an application programming interface does not use a database for providing information for translating values of device variables into a human-understandable language as recited in amended claim 10.

The Examiner may take Official Notice of facts outside of the record which are capable of instant and unquestionable demonstration as being "well-known" in the art. In re Ahlert, 165 USPQ418, 420 (CCPA 1970). If the Applicant traverses such an assertion the Examiner should cite a reference in support of his position. M.P.E.P. § 2144.03. Applicant respectfully traverses the Examiner's taking of Official Notice and respectfully requests that the Examiner support the taking of Official Notice by producing a relevant reference that shows the use of a data dictionary to facilitate translation of device variable values into human-understandable language and that the Examiner identify a specific teaching in the reference to support a combination with Krishnamurthy.

In addition to the above, the Examiner has not explained how the teachings of Smith and Barrett et al could be combined with Krishnamurthy for presenting information in a human-understandable language using a database. Krishnamurthy does not include a database which includes information for converting device values in the native language of the device into a human-understandable language, or the step of performing the translation using the information from the database. Neither Smith nor Barrett et al. teach or suggest using a database to replace the twofold process described by Krishnamurthy of translating the device information into SNMP and then operating on that information by script programs in the web server 64 to generate forms which include the device information. Applicant submits that the combination of Krishnamurthy, Smith and Barrett et al. does not teach or suggest all the limitations of amended

claim 10. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the § 103 rejection of claim 10.

Claim 11 recites that if the names of variables are not obtained from the data dictionary, communication is automatically established with a data central external to the system for obtaining the names of the variables.

In respect to claim 11, the Examiner states that both Krishnamurthy and Smith disclose communication with a data central (i.e. web server) external to the system for obtaining names of variables. However, one having ordinary skill in the art would understand from the Application that a data central is a database and further, that a web server is not a database but merely provides access to a database. Further, the web server 64 disclosed by Krishnamurthy is not external to the system but is contained within the system and essential for the basic operation of the system.

Also, amended claim 11 recites the step of automatically communicating with a data central when the information could not be obtained from the data dictionary. For Krishnamurthy to teach the use of a data central, Krishnamurthy would have to disclose two databases, one of which is external to the system, each of which being configured for containing information for translating from the native language of devices into a human–understandable language. Applicant submits that neither Krishnamurthy or Smith teach or suggest two databases which are thus configured. Further, there is no teaching or suggestion in either Krishnamurthy nor Smith for automatically accessing a data central external to the system when information is not available from the data dictionary contained within the system.

With respect to amended claim 12, the Examiner states that Krishnamurthy-Smith store in the data dictionary the names and language of the variables of the type of device. However, it is clear that neither Krishnamurthy nor Smith have the equivalent of a data central. Further, even if such were the case, which it is not, there is not a process taught or suggested for

automatically updating a database in the site server 12 with information obtained from a data central.

Further, it is respectfully submitted that since amended claim 10 has been shown to be allowable, amended claims 11 and 12 dependent on claim10 are allowable, at least by their dependency. Accordingly, for all the above reasons, Applicant respectfully requests reconsideration and withdrawal of the § 103 rejection of claims 11 and 12.

Rejection - 35 U.S.C. § 102

The Examiner rejected claims 13-26 under 35 U.S.C. § 102 as being unpatentable over U.S. Patent No. 6,389,464 (Krishnamurthy). The Examiner states that Krishnamurthy, discloses selecting one of a plurality of data agents, communicating with a data dictionary and obtaining values of variables from the device at the selected network address such that a type of device is determined from the values of the variables. The Examiner states that Krishnamurthy discloses that the user may repeat the foregoing steps if the values are not obtained (col.12, lines 1-23).

Krishnamurthy discloses, starting at col. 10, line 32 the various methods by which a user manages a network of connected devices. More specifically, col. 12, lines 24-34 describe obtaining values of variables from a MIB using the well known GET command. As disclosed by Krishnamurthy, in order to obtain a value of a variable, the user must "enter the native command string of the device". Consequently, in order to obtain values for variables using Krishnamurthy's invention, the user must: (1) know the type of the device and (2) manually enter the command string for each variable. Other configuration operations also require significant user knowledge using specialized data entry forms (see Figs. 4-29).

Amended claim 13 recites:

> 13. *A method, using a computer system, for establishing communication with a device, said device having a known network address but having a language and/or protocol for communication*

> *with the device that is unknown to the system, said computer system comprising a data engine and a plurality of data agents, each one of the plurality of data agents being associated with a specific language and protocol, the method comprising the steps of:*
>
> *(a) selecting one of the plurality of data agents based on the network address;*
>
> *(b) communicating with a data dictionary to obtain names of variables associated with a union of the selected network address and the selected data agent; and*
>
> *(c) obtaining values of the variables from the device at the selected network address required for determining a type of the device using the language and protocol of the selected data agent, wherein if the required values are obtained, a type of the device is determined from the values of the variables, and if the required values are not obtained, automatically repeating steps (a), (b) and (c) until the required values are obtained.*

Applicant has amended claim 13 to make it clear that the claimed iterative process is for obtaining the values of those variables required to determine the type of the device and that the iterative process is completely automatic.

The process disclosed by Krishnamurthy does not disclose, teach or suggest: (1) an automatic iterative process for obtaining required variable values from a device without any knowledge of how to communicate with the device save its network address or (2) a process which determines a device type from the values thus obtained. Krishnamurthy merely discloses a process by which a user may configure a device having full knowledge of the language and the protocol for communicating with the device, or for obtaining selected information about the device using an SNMP command or a web form. Krishnamurthy does not teach any kind of an automatic iterative process which determines the correct data agent for communicating with the device as recited in amended claim 13. Further, Krishnamurthy does not teach or suggest automatically obtaining the values of the variables required for determining the type of device and then determining the type of device, as recited in amended claim 13.

In order to anticipate a claim under 35 U.S.C. § 102, the reference must teach every element of the claim. MPEP § 2131. Applicant submits that Krishnamurthy does not teach

every element of amended claim 13. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the §102 rejection of claim 13.

Claim 14 recites that if the names of variables are not obtained from the data dictionary, communication is automatically established between the data dictionary and a data central for updating the data dictionary with the names of the variables. There is no teaching or suggestion in Krishnamurthy for automatically accessing a data central when information is not available from the data dictionary or for updating the data dictionary with information from the data central.

Further, it is respectfully submitted that since claim 13 has been shown to be allowable, claims 14-21 dependent on claim 13 are allowable, at least by their dependency. Accordingly, for all the above reasons, Applicant respectfully requests reconsideration and withdrawal of the § 102 rejection of claims 14-21.

Amended claim 22 recites:

> *A computer system for communicating with a device connected to the system at a network address by the use of a data agent which communicates with the device using the specific protocol and/or language of the device, said system comprising:*
>
> *a data engine;*
>
> *a plurality of data agents operatively connected to the data engine, at least two of the data agents being adapted to utilize a different language and/or protocol for communicating with the device; and*
>
> *a data dictionary connected to the data engine, said data dictionary containing information for translating the values of variables in the native language of the device into human understandable language and being adapted to automatically provide names of variables corresponding to both the network address and to the language and/or protocol of the device, wherein the data engine uses the names of the variables provided by said data dictionary to automatically obtain values of the variables from the device, and wherein the data engine automatically translates the values of the variables into human understandable language using the information for translating the values obtained from the data dictionary.*

As discussed above in connection with claim 10, Krishnamurthy does not teach or suggest a data dictionary that contains information for translating the values of variables in the native language of the device into a human understandable language. Further, Krishnamurthy, as discussed above, uses scripts for translating information into human understandable form and does not translate the values of device variables in the native language of the device into a human-understandable language using information from a data dictionary.

Applicant submits that Krishnamurthy does not teach every element of amended claim 22. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the §102 rejection of claim 22.

Further, it is respectfully submitted that since claim 22 has been shown to be allowable, claims 23-26, dependent on claim 22 are allowable, at least by their dependency. Accordingly, for all the above reasons, Applicant respectfully requests reconsideration and withdrawal of the § 102 rejection of claims 23-26.

CONCLUSION

Insofar as the Examiner's rejections have been addressed, the application is in condition for allowance and Notice of Allowability of claims 10-26 is therefore earnestly solicited.

Should the Examiner choose to issue an advisory action, Applicant respectfully requests that prior thereto, the Examiner telephone the undersigned at the telephone number indicated to discuss the application.

Respectfully submitted,

DRAGAN SRETENOVIC

January 5, 2005 By: _____
(Date)

LOUIS SICKLES II
Registration No. 45,803
AKIN GUMP STRAUSS HAUER & FELD LLP
One Commerce Square
2005 Market Street, Suite 2200
Philadelphia, PA 19103-7013
Telephone: 215-965-1200
Direct Dial: 215-965-1294
Facsimile: 215-965-1210
E-Mail: lsickles@akingump.com

LS